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THE GENESEE FARMER.

SATURDAY, MAY 25, 1839.

THE SILK BILL—PROTECTION.

So it seems that our legislators think the farmers do not understand their own business, and have in consequence seen fit to deny the favors to which they have such u ndoubted claims, and which have been demanded with so much unanimity. Agriculture has been left to its own resources, and the spirit of those who follow this noblest of all pursuits; and however the injustice and wrong may be felt, and deep as the taunts that accompanied the rejection of the farmers' petitions, must sink into the breast of every one who feels that it is to them these men are indebted for their place, and their power to injure, we are confident that the course of the cultivator will be onward, and that in reference to those legislators who, as they believe, greviously erred in judgment, they will bide their time. Our acknowledgments are due to our legislative friends who so ably sustained the cause of agriculture, and though their efforts were now unsuccessful, the principles for which they contended will ultimately triumph in spite of all opposition.

We particularly regret the failure of the silk bill, as it was eminently calculated to excite and favor a new branch of domestic industry, which if once established would very greatly benefit the country. In introducing such sources of national profit, a trifle of aid at the commencement, or protection in the outset, will do more good, than far greater expenditures at any other period. We do not believe the importance of the silk business to this country has been overrated, or that its complete practicability can be reasonably questioned by any one. The experience of the last year was conclusive as to the success of the mulberry culture in the states farther north than the most sanguine had dared to hope, and the ease and certainty with which worms were fed, and first rate cocoons produced, proves that there is no mystery in the business. We regret these rejections of aid to agriculture, and the manner in which it was done, as think we discover in this and some other things a disposition to withdraw all protection and aid to domestic industry or productions, and place all on the footing of what is delusively and false called free trade. If it is intended to place the American wheat grower and farmer on a level with the Russian serf, or the German boor; if the manufacture of salt at the Onondaga and Kenhawa salines is to be stopped by all protection from the unchecked importation of the foreign article being withdrawn; if it be better that fifteen millions of dollars annually should go out of this country for an article that our unemployed women and children could produce with perfect ease; and if it is determined that it shall be so; then it is time that these things were understood by the people. Let our cotton manufactories be crushed, let our woolen mills be destroyed, let us once be thrown upon the mercy of foreigners as to prices, as we were a few years ago, and the same results would ensue. Our beautiful and valuable flocks of sheep would speedily disappear, the capital invested in manufacturing irrecoverably lost; and prices that competition now keep within reasonable limits would soon assume a form that would make frightful inroads on the prosperity of individuals and the nation, These are subjects which should receive the attention of every citizen, and none are more deeply interested in the decision than the cultivator of the soil.

Disease of the Plum and Cherry.

We wish to call the attention of all lovers and cultivators of these fine fruits, to a disease long familiar to eastern fruit growers, but which has not appeared in the western sections of our country until within a short time; and which, from the progress it made in 1838, will, unless prompt measures are taken, render the growth of plums and cherries as uncertain here, as it is in the eastern states.

This disease is termed the excrescence, or blight, by some, and may be readily known by the irregular, unsightly swellings that take place on the affected branches, destroying the vigor and healthiness of the tree, and unless checked in time, multiplying to such an extent as to speedily cause the death of the tree. It was considered at first a mere exudation of sap or gum from the branches, and as many insects were found in these masses, the presence of these was attributed to the discharge from the tree, instead of the injury being charged to the insect itself.

A variety of experiments (and for many of these we are indebted to Judge Buel of Albany) proved, however, that the cause had been mistaken for the effect, and that the injury, instead of producing the insect, had been caused by that alone. It seemed probable, also, that the insect was one unable to fly, as some of the methods of prevention could have had no effect on such as were provided with wings. Thus it was found that placing turfs with the grass side down in the lower branches of trees, so as to close around the trunk, would produce a good effect, by partially preserving the trees from attack.

The increase of the evil directed the attention of entomologists at last to the subject, and papers on the blight and its cause were given to the public by several gentlemen, among whom were Professor Peck of Harvard, and Dr. Mitchell of New-York. These essays threw much light on the matter, and led to a more rational mode of prevention. According to Prof. Peck, "The seat of this disease is in the bark. The sap is diverted from its regular course, and is absorbed entirely by the bark, which is very much increased in thickness, the cuticle bursts, the swelling becomes irregular, and is formed into black lumps, with a cracked, uneven, granular surface. The wood, besides being deprived of its nutriment, is very much compressed, and the branch above the tumour perishes." In examining the character and habits of the insects, Prof. P. selected a small branch, and slicing off thin pieces, found the mass was filled with larvæ. A piece of the diseased branch was then placed in a glass vial, and it was soon found that these larvæ had left the tumour, and were in a restless state at the bottom of the glass. A vessel with earth was procured, in which the larvæ buried themselves, and in twenty-four days from their leaving the bark, the perfect insect was produced. They belong to the genus *Rhynclenæus*, and are a variety of the fly that punctures the fruit of the plum and cherry. The investigations of Dr. Mitchell had a result very similar to those of Prof. Peck; and though some little difference has existed with regard to the identity of the insect, no doubt can remain that to a cause of this kind we owe the disease in question.

As a necessary inference from the habits of this depredator, it was found that the most effectual remedy was the careful examination of the trees, and the immediate excision of all the branches that exhibited the least signs of infection. These were committed to the flames, and thus by the destruction of the larvæ, the increase of the insects was prevented. It is evident that this will be done most effectually, when the diseased branches are cut off as soon as possible after the injury is inflicted, since though some of the larvæ may remain in the excrescence through the season, the greater part, as they arrive at maturity, will fall to the earth, where they will undergo their transformation, and emerge a perfect insect, ready to increase the evil, and perpetuate the race. The rapidity with which they cause the entire destruction of the tree attacked, should cause farmers to be on their guard, and examine their trees frequently to detect the earliest appearance of the enemy.

Thus far, its depredations have, so far as we have observed, been confined to the plum, and the Morello or black cherry. Whether the other varieties of the cherry will escape, remains to be seen. We have known within a year or two some fine plum gardens almost entirely ruined from this cause; the black and deformed branches too plainly indicating the nature and rapid spread of the evil. We advise our farmers and fruit growers, then, to examine their plum and cherry trees carefully this spring, and remove every diseased branch. If it does no other good, it will enable them to detect new attacks of the disease more readily, by removing all former appearances; and there is reason to hope, that by a firm and *general* adoption of this course, these valuable fruits may be preserved from that extinction which has befallen them in many districts of the Atlantic states, or those parts of these states east of the mountains.

Since writing the preceding, we have examined an infected branch with the aid of a good glass, and find in the fungus no appearance of either eggs or larvæ at this time. By carefully dividing the branch longitudinally, and slicing it off thin, the character of the mass, and the manner in which it destroys the part infected, can be clearly seen. In the parts latest attacked, the bark and surface of the wood only is affected; while in those places in which it made its first appearance, it has penetrated to the pith, or even embraced the whole branch. The substance of the fungus is evidently the elaborated juices, that in a healthy and undisturbed vegetable action would have been converted into fruit. So perfectly now does it resemble some kinds of dried prunes, that a thin slice of one can scarcely be distinguished from the other. There is the same semi-transparency in both; though in the fungus minute portions of gum will be seen, that are not to be discovered in the fruit. We hope that farmers will be on the alert, and endeavor, by careful examination of these trees, to detect the first approach of the enemy; and by multiplied observations arrive at correct conclusions respecting the cause of this disease, and the best methods of extirpating it.

BEET SUGAR IN MICHIGAN.

We may soon expect to be supplied with the "*sweets* of life," from the prairies of the west. The people of Michigan are more extensively engaged in the Beet-sugar business, than any other part of the Union. Several companies have been formed for the purpose, which have planted large quantities of beets, and some wealthy individuals are planting largely on their own account. The Hon. Lucius Lyon, of Ionia county, came to this city a few weeks since, and purchased at the Rochester Seed Store over *three hundred pounds* of sugar beet seed, together with machines for sowing and cultivating them. Mr. L. informed us that he intended to plant *one hundred and fifty acres* of beets, and to erect suitable buildings and apparatus for an extensive sugar manufactory. He expressed the fullest confidence in the success of the enterprise, and has sent to France for an experienced workman to superintend the business. We wish Mr. L. complete success, and hope he will send us an account of his operations next fall.

DICTIONARY
OF
TERMS USED IN AGRICULTURE,
AND IN THE SCIENCES MOST INTIMATELY CONNECTED WITH ITS ADVANCEMENT.

[Continued from page 122.]

BREEDING. A term applied to the improvement of animals by crosses, or breeding from new varieties, by which new and superior kinds are obtained, and any desirable quality, whether of size, propensity to fatten, or for milk, secured. It is only within the last half century that the business of breeding has received the attention it deserves; and the astonishing improvement made in the animals of those countries where it is best understood and practiced, shows that few steps in reducing agriculture to a science have been attended with happier consequences. Such has been the result in England and Scotland, that the average individual weight of the immense numbers of cattle and sheep now annually slaughtered at Smithfield, is nearly or quite one half greater than it was at the time the first efforts at improvement by breeding commenced. Of the many who have distinguished themselves in Great Britain, as breeders, Bakewell, the Collings, Culley and Berry, are noted for cattle, and Bakewell and Ellman have distinguished themselves in the improvement of sheep. The principles of breeding are few and simple. Let the object desired in any particular race of animals be distinctly understood, and the animals for breeding or crossing be selected with reference to these objects. It should be remembered, that in determining the character of the offspring, it is found by experience, that the influence of the male is greater than that of the female. It is by the observance of these, and a few other principles equally plain and simple, that Bakewell and the Collings raised the Durham short horns to so high a standard; that the first named gave to the Leicester sheep a form and weight of which former sheep growers had never dreamed; that Ellman has brought the South Down to within a few grades of the Merino in fineness of wool; and that the improved varieties of swine, such as the Chinese, Berkshire, and others, have so far exceeded in value and actual profit to the farmer the common kinds of this animal. Great efforts are at this time making in this country, and with decided success, to raise the standard of our domestic animals, by importations from abroad, and careful breeding at home. The results are such as to encourage the belief, that in a few years first rate animals of all kinds will be as common here as they have hitherto, and most unfortunately, been rare.

BROADCAST. The putting of seeds into the earth is performed in various ways, as by broadcast, planting in hills, drilling, and by dibbling. Grain in this country is usually sown broadcast, while maize, potatoes, &c. are planted. In sowing broadcast, considerable skill is required to spread the seed equally over the ground. A failure of this kind is not only injurious to the crop, but as when the grain springs up, it may be seen for a great distance, the unevenness of the sowing gives a most unfarmerlike aspect to the field. In broadcast sowing, it is requisite to take advantage of the wind, or guard against its drift, as in this way great inequalities are sometimes produced. When grain is sown broadcast, the plough or the harrow must be relied on for covering it; and unless these operations are well performed, much of the seed will remain uncovered, and be lost to the purposes of vegetation. In planting, the hoe performs the office of covering the seeds, and of course the depth can be easily regulated to any desired thickness of earth in covering. Drilling and dibbling are as yet but little practiced in this country, but they have many advantages to recommend them, both in the saving of seed and the equal manner in which the seeds used are distributed. (See these articles.)

BROKEN WIND. This is a disease of horses, in which the inspiration is performed by one effort, and the expiration by two; which is plainly distinguished by observing the flanks, and noticing that the expiration occupies double the time of the inspiration. The cause is, the rupture or running together of some of the air cells in the lungs, and the consequence is, that while the expansion of the chest fills the lungs with air, an unusual and double effort is required to force it out from the unnatural position it occupies. The origin of the disease is to be found most commonly in the previous treatment of the animal; though it is sometimes the result of inflammation of the lungs. Horses which are fed on bulky food, which are allowed but a short time to eat, or are naturally great feeders, and which are put to severe work on a full stomach, are the horses that most commonly are broken winded. Race horses, carriage and coach horses, that live principally on grain, or food of little bulk, rarely suffer from this disease, though their exercise is frequently of the severest kind. Farmers' horses suffer the most, as the food they receive is generally more bulky, and the time allowed for receiving and digesting it, is less than with the kinds named. The bulky food presses severely on the lungs, and while filled in this way to repletion, the horse is taken from the stable and put to the plough or wagon, where the result is such as might reasonably be expected, serious injury to the horse at the time, and fatal results hereafter. No person, we think, has ever seen a broken winded horse cured. Palliatives are all that can be expected to produce beneficial effect. The nature of the disease points out these. Food containing much nutriment in little compass; water sparingly given through the day, or while the horse is at work; the bowels kept loose; and above all, the horse must never be put to hard work while the stomach is full. Broken winded horses should not be turned out to grass; the food is too bulky; the stable and grain is their proper place and treatment.

BUCKWHEAT. A triangular grain produced by a plant of the *Persicaria* tribe, of which the *Polygonum fagopyrum* is the common cultivated kind. Its leaves are arrow shaped; its flowers purplish white. It originated in the north of Asia, and has been known in England about 200 years. Buckwheat is a valuable grain, and is grown extensively in Pennsylvania, and all the states farther north, as food for cattle, swine and poultry. Buckwheat cakes, well made, are an excellent substitute for bread; and in some years have furnished a large part of the food of the laboring part of the community. When well prepared, such cakes have established a reputation, which, during the winter months particularly, renders them a welcome visitant at the tables of the most fastidious. Some farmers sow buckwheat for the purpose of ploughing it in, as a green dressing for crops. Its quick and luxuriant growth renders it very suitable for this purpose. Buckwheat straw, if properly secured and kept from exposure, is one of the most valuable kinds of fodder for animals in general, but it must be cut before it is bitten by frost, to retain its good qualities. There is no plant which furnishes more abundant supplies of honey for bees, or for a longer period than buckwheat, and in some places it is sown for this purpose alone. It gives a distinct flavor to honey, when it is new, but it is by no means unpleasant, and it loses it by age. Within a few years, another kind of buckwheat, (*Polygonum tartaricum,*) or Indian wheat, as it is called by some, has received a good deal of attention in some parts of our country, and been highly recommended as a great bearer and excellent grain. Whether it will prove superior to the common variety, remains to be seen. All kinds of buckwheat are valuable, as producing good crops on soils comparatively exhausted, and requiring but little seed to an acre. Indeed the great fault in sowing this seed is, that in spite of precaution, it is used too liberally. If sowed too early, there is danger from spring frosts; if too late, the fall frosts will be likely to overtake the plant before the seeds are ripened.

BUD. All plants, vegetable stems, and every branch springing from these, are developed from buds or germs, and these at first are so small, that no optical means we can command are able to determine their origin. When developed, the bud is found to contain within itself the parts that are to arise from it, in miniature, and folded up as it were, in the smallest possible compass. So true is this, that the future plant or tree may be considered only as an enlargement of parts already existing in the germ. From the fact, that each bud is a perfect plant, the practice of *budding*, or the insertion of buds in inoculation to propagate trees or plants, or substitute valuable varieties for those of inferior quality, has arisen. A bud so inserted, attaches itself to the tree, and with proper care, forms a new head to the original stock, the fruit or foliage of which is like the tree from which the bud is derived.

BULB. There are a number of plants, the roots of which are perennial, while the tops are annual; and as these seem destined to contain the nourishment of a new plant, they are enlarged, and either flatted or rounded as the variety or species may happen to be. Many of the finest flowering plants are bulbous, and in some places, particularly in Holland, the culture of such bulbs (tulips and others) for sale, is an important and lucrative branch of trade. Among farmers, the only two bulbous roots that attract much attention, are those of the onion and turnep. Bulbous roots, like the tuberous ones, are preserved with ease, requiring only a temperature of little above freezing, to prevent germination, and atmospheric dryness to prevent mouldiness or rotting.

BURNING. In agriculture, burning consists in taking the turf from land with as much of the earth as will adhere to it, drying it thoroughly, and then either with or without the aid of other fuel, burning it in large pits prepared for this use. The greatest benefits of burning are experienced on clay soils, where a mixture of other earths are required to counteract the natural adhesion of the clay. In burning, all the clay particles are converted to a kind of brick earth; and this, on being spread over the earth, together with the ashes and salts produced in the process, furnishes an excellent dressing, as well as a permanent amelioration in the soil. The brick dust acts as the addition of siliceous matter in rendering the earth more friable, and from its color, it retains the solar heat better than when in its former state. Paring and burning is also destructive of all foul seeds, and of all insects, unless their habitation lies below the turf. In this case, the ashes not unfrequently destroy or drive them away. The ashes so made are sometimes mixed with lime and vegetable or animal manures, in the manner of composts, and then applied to the soil with great effect.

BUTTER. Milk is composed of an oily, caseous and watery substances, from which butter, cheese and whey, are respectively produced. There is scarcely an article of domestic production in more extensive use, or one which varies more in quality than butter. To produce the best, it is necessary that the food of the cow should be sweet and good; that the milk should be kept free while the cream is rising from all offensive odors or impure air; that the cream should be taken off before the milk sours and renders separation impracticable; that the churning should not be delayed, lest the cream become bitter and rancid; that the churning should be performed with the cream at a proper temperature, or not far from 63°; and that the separation of the buttermilk should be complete. After the churning is commenced, and particularly after the formation of the butter is begun, there should be no interruption until the work is finished. The great cause of butter becoming rancid, or *frowy*, is the imperfect separation of the buttermilk, and neglect in salting. None but the best and purest salt should be used for butter; and when these several points are attended to, there is little danger that the article will not be of good quality.—Butter made in this way, freed from milk, salted with pure salt, and every part of the process conducted with the neatness which is indispensable in the dairy, can be kept for any desirable time, if packed in close vessels that exclude the air, and kept at a low temperature. The quantity of butter a given quantity of milk will produce, varies much in different animals, the milk of some being much richer than that of others. Tall slender glasses are useful in determining the quality of

milk, as they show the relative thickness of the cream. Cows will give of butter from 150 to 300 pounds in a year, and none but the best animals should be selected for a butter dairy.

STRAIGHT ROWS.

In a former article, the importance and advantages of *straight rows* in planting were alluded to. A little calculation will show them in a clearer light. A cultivator, where rows of corn are perfectly straight, may in good soil be made to pass within an inch or two of the plants without any injury or danger. But where they are as crooked as is frequently seen, it is impossible often to approach nearer than six inches, or even a greater distance. Hence it is apparent, that in the latter case the labor of hoeing would be three or four fold. It is also evident, that in the case of crooked rows, greater width between them is required, in order to allow the cultivator to pass freely. Hence the number of hills on an acre will be fewer in the latter instance, and may be estimated as only *five-sixths* of the former.—Suppose then we have two ten acre fields, one with straight and the other with crooked rows. Suppose, also, that a workman would hoe an acre a day of the former, then according to the estimate above, he would be three days hoing an acre of the latter;—he would be ten days hoing the one, and thirty hoeing the other, showing a loss of *twenty* days' work in consequence of crooked rows. A careful examination, we believe, will often show at least this difference.

Again, but *five-sixths* of the amount of corn on the straight rowed field, would grow on the other. Suppose, then, the corn yields forty bushels to the acre on the former; this would be four hundred on the whole field. Five-sixths of this are three hundred and thirty-three, showing a loss of sixty-seven bushels by crooked rows. When the more imperfect culture which must necessarily result from the latter, is taken into account, we believe this estimate will not be at all extravagant. It is to be remembered, however, that in speaking of straight rows, we do not mean such as are frequently called so, but those which are so in reality. J.

SALT.

The great importance of common salt (*muriate of soda, chloride of sodium*) in many of the arts, the necessity of its presence in our culinary preparations, its valuable antiseptic properties, by which it greatly assists in furnishing us a constant supply of animal food, and the extensive use made of it by the agriculturist, all contribute to render it one of the most indispensable materials on the globe; and it is remarkable, that by the arrangement of providence, it is more widely distributed under some one of its modes of formation, than almost any other article. The sea is at present, and probably ever has been, the grand reservoir of salt; yet its existence in minute quantities in almost every soil, and in all water, proves that nothing more is wanting to render any body of water salt, than a prevention of renewal, while the fluid parts, being carried off by evaporation, whatever substance the water may hold in solution will of course be left behind. Thus all lakes without outlets are found to abound in saline substances; among which common salt usually predominates; as proofs of which we may refer to the Caspian and the Dead Sea. It is also probable, that from the subsidence and evaporation of such bodies of water, or from changes in the relative position of the earth and the sea, those immense bodies of rock salt which are found in various parts of the world, owe their origin. A process similar to what we may suppose took place at the formation of these beds, may now be witnessed in the interior of many countries in Africa and in Asia, where heavy rains, which dissolve the salts in the soil and carry them to the lower levels of the country; are then speedily evaporated, leaving a layer of salt, to be increased by every annual flood. We may suppose, that if all supplies of water were cut off from the Onondaga Lake, except such as would be furnished by the saline springs with which it seems to be surrounded, while the process of evaporation went on without check, in the course of a few years the whole mass would become sensibly salt, and in the progress of centuries a mass of solid rock salt. Such a change would be perfectly analogous to that which travelers assure us is now going on in the vicinity of Lake Tchad in Central Africa.

Salt for use is procured from one of three sources; mines of rock salt; from the sea; or from salt springs. The most celebrated mines of rock salt, are those of Poland, which have been extensively worked for six or seven hundred years, and are by many supposed to contain a supply sufficient for the whole world. Another abundant source of this salt is in the mountains of Spain, where a stream has cut a deep ravine in solid salt to the depth of two hundred feet, and the salt is obtained by simple quarrying, like ordinary stone. In the United States, the only place where rock salt is found on the surface, is on the head waters of Red River, where a stream flows for miles between high banks and mountain masses of salt. In boring for water a year or two since, near Marion, in Missouri, at the depth of about 60 feet the auger passed through several feet of solid salt, thus indicating that in this place was an abundant resource for the future wants of the country. The greatest quantity of rock salt used in England, is found in Cheshire; but it is much of it so mixed with clay and iron, that it is necessary to purify it by solution and evaporation. In Africa, the salt from the mines of Tudenny, on the great desert, broken up into blocks, and transported in all directions, passes current as payment for most commodities, like the cavries, or the golden dust, gathered from the rivers.

In making salt from the sea, evaporation is of course wholly relied on, and hence some situations are altogether more favorable than others, as the water is not only stronger in some places than others, but the preparation of vats for the reception and concentration of the water, is much more easy in some places than it can be in others. In the United States, the principal manufactories of sea salt are along the low sandy shores of the southeastern part of Massachusetts, and in some parts of the southern states. The quantity so made is considerable, and the quality is very good. But the greatest manufactories of sea salt are in the West India cluster of Islands, among which, those of Turks Island hold a high place; as in these the dryness of the air, the rapidity of evaporation, and the vast surfaces which can be flowed at little expense, unite to facilitate all operations of the kind.

Salt springs are more abundant in the United States, perhaps, than in any other part of the world, and not less than six or seven millions of bushels are annually produced from this source. The two greatest supplies of this water are found in Western New-York and in the upper valley of the Ohio. In New-York, the water rises to the surface of itself, though the quality has been improved by sinking wells; while in the salt deposit of the Ohio, it is necessary to penetrate the rock from three hundred to eight hundred feet. In New-York, the springs reach from Oneida county, nearly on the line of the canal, to Niagara, and to some little distance to the north and the south; the greatest quantities are produced at Salina and Montezuma, in Onondaga and Cayuga counties; indeed, the business has been abandoned at all other places, the strength of the water not being great enough to furnish sufficient inducement to continue the work. In the town of Salina, more than two millions of bushels are produced annually. The origin of the salt water seems to be involved in mystery; and though it is probable it owes its origin to rock salt, still the repeated efforts to ascertain this fact, have ended only in disappointment. The last boring for this purpose was made in 1838, about half a mile in the rear of the principal springs, and on some land rather more elevated than that in the immediate vicinity of the springs; but after continuing the boring to the depth of nearly four hundred feet, without any traces of salt, the operation was discontinued, the auger being in a mass of gypsum at this depth.

The salt springs in the valley of the Ohio, are principally found on the Muskingum, in Ohio; the Kenhawa, in Virginia; and the Kiskeminitas, in Pennsylvania. Of these, the works on the Kenhawa are the most productive, furnishing a greater amount of salt than the springs of any other part of the country, with the exception of those at Onondaga; the quantity equaling nearly or quite two millions of bushels annually. The average depth of the Kenhawa springs is about six hundred feet, and the salt water is found in a porous white sandstone rock, containing large quantities of gas and petroleum, which in some instances is forced up with astonishing force, and in great quantities. This substance has never yet been found in connection with the New-York springs; and probably may be traced to the existence of the immense beds of bituminous coal which abound in this valley. There is no material difference between the Ohio and the Onondaga salt; the variations in purity in both cases depending on the perfection or imperfection of the manufacture. All salt contains some foreign substances, which lessen its purity; and that is the best which is made from the solution of rock salt. We give below a table of the comparative value of several kinds of salt, from the analysis of Professor Webster of Harvard.

Liverpool coarse fine, No. 2, and Liverpool finest, No. 6, in quality were precisely like No. 8 of the table, being derived from the same source. No. 3, is a specimen from Eastport, in Maine, to which place large quantities of the impure rock salt from Cheshire, in England, are brought and then manufactured by evaporation and solution. No. 5, Turks Island salt, is the same as No. 1, in purity. The specimen from Onondaga, was the fine table salt. That which is made by solar evaporation, now called coarse or alum salt, is of greater purity and strength, than any made in this country. No. 9, is a specimen of sea salt, and is rather superior to that ordinarily made from sea water. The quantity submitted to examination was 500 grains of each.

Locality of Specimens.	Muriate of Soda.	Sulphate of Magnesia.	Sulphate of Lime.	Aluminous Matter.	Muriate of Magnesia.	Muriate of Lime.	Insoluble earthy mat.
1. Sicily coarse salt,	478	4½	2½	4½	2½	1½	6½
2. Liverpool coarse fine,							
3. Eastport, Maine,	491		3½		2½	1	2
4. New-York, fine,	483	5½	5½		4	2	
5. Turks Island,							
6. Liverpool finest,							
7. St. Ubes coarse,	479½	2	10		2	1½	4½
8. Native rock salt from Cheshire, England,	491½		3½				5
9. Quincy sea salt,	484½	3	5			4½	2

Coarse salt is better than fine for meat, it keeping the meat more separate, and being longer in dissolving. The purest and finest salt only should be used for butter, and the coarse Onondaga salt, ground, makes a capital article.

RAPIDITY OF VEGETATION.

It has been stated by botanical writers that some of our forest trees, such as the oak and walnut, perfect their growth for the year, and form their terminal buds, in a few hours or days after they commence shooting. They have been known to make such shoots of 12 or 14 inches in length in 48 hours, finishing their growth, and forming their winter buds in that time. The terminal buds on some kinds of shrubbery, the lilac for instance, are, on the main shoots, formed early in the season.

TESTING ONION SEED.

Rees' Cyclopedia states that an expeditious method of determining the vitality and germinating power of onion seed, is "to tie a thimble full of the seed loosely in a linen rag, and put it into a vessel of hot water, suspended by a thread; in ten to fifteen or twenty minutes, pull it out, and if the seeds are good, in that time they will have germinated or sprouted to the extent of a quarter of an inch in length." If onion seeds can be made to germinate in this way, why not others? We should have been pleased had the encyclopedists have told us the temperature of the 'hot water' used in the experiment. That may be an essential point.

COMMUNICATIONS.

On the Phenomena of Vegetation.---No. 1.

On the third day of the Creation, the Almighty mandate was issued,—"Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind, whose seed is in itself upon the earth, and it was so. And the earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind; and God saw that it was good."—Genesis, chap. I. Since that memorable event, a period of 5843 years, according to the Vulgate, and of 6539 years, according to the Samaritan Pentateuch; of 7711 years, according to the Septuagint, and of 7183 years, according to the Talmud; of 7331 years, according to the Alexandrian and Abyssinian reckonings, and an indefinite length of time, according to the hypothesis of the infidel and the sceptic, has elapsed. But no vestige of this primitive creation now exists. No vegetable production is now in being, to which the fictions either of tradition or imagination can impute an origin exceeding a fraction of the shortest of these periods. Must we not, therefore, unhesitatingly acquiesce in the deduction drawn by Loudon, as respects the existing vegetable world, that "all plants spring originally from seed."—Loudon's Gard. 716.

What then is a seed? So far as has been hitherto ascertained, a perfect seed consists of two parts. 1st, The corcle, comprising the embryo of the future plant, endowed with vegetable life; and 2dly, The cotyledons, or receptacle of nutriment, prepared in the parent plant, for the purpose of promoting germination, and thereby conducting this embryo to a state of existence, in which it may be enabled to elaborate food for its future subsistence and growth.

The embryo consists of two parts—the radicle, and the plumula. The former is the rudiment of the root; the latter that of the stem. The seed having been placed in a situation that can afford it the essentials requisite to germination, viz. heat, moisture, air and rest, the first perceptible step in the expansion of the plant, is the protrusion of the radicle, which becomes adapted to the absorption of the principles of nutriment from the soil; after which the plumula is developed, and its leaves expanded, and prepared to elaborate these principles thus absorbed by the radicle. Until this development be completed, the embryo derives its subsistence from the receptacle provided by the parent plant alone. In some cases, (as in the garden lupin,) the cotyledons, in which this nutriment is deposited, after the prepared food has been exhausted, assume the character of leaves, and nurse the embryo; and should the plant be deprived of their assistance before the radicle and plumula be completely developed, it will either perish or become more or less stunted or affected in its growth.

Thus developed, the plant consists—1st, Of a *caudex descendens*, or stem of a root, terminated by a spongiole; and 2dly, of a *caudex ascendens*, or proper stem, terminated by the folioles or leaves, embracing the bud, the germ of its subsequent extension and growth.

It is a favorite hypothesis with some Phytologists, that Nature, having attained this stage in vegetation, now appears to rest, as if to acquire renewed vigor for future exertions. Not to waste time on such a *palpable fantasy*, let us pause here too, and take another view of the progress of the development which the plant has made. By this means, we may perhaps be able to ascertain the true operations of Nature.

Besides the spongioles, folioles and buds, it has been shown that the plant now consists of a *caudex descendens*, or root stem, and a *caudex ascendens*, or proper stem. A transverse section of the latter, with the aid of a powerful microscope, will exhibit a pith, medullary sheath, (comprehending the spiral vessels,) and if it be a tree, distinct traces of ligneous and cortical layers, corresponding in size with the state of development which the plant has undergone, with a cuticle or cellular integument embracing the whole. Again, a section of the *caudex descendens* shows no proper pith, and no spiral vessels; but the elongated substance of the spongiole is encased in a ligneous, and that in a cortical layer, and the whole surrounded with a cellular integument. But the organs exhibited in the embryo plant before its development, display no traces of ligneous or cortical layers.* These, therefore, have been formed in the plant after its elongation. Instead of Nature resting then, it is thus evident that she has been unceasingly engaged in the formation of these cortical and ligneous layers.

But what is her object in the formation of these layers? for all plants are not provided with them. Turn to the garden flowers and vegetables, and examine the growth of the radish, the turnep, the carrot, the onion, and other annuals and biennials. During the period of this hypothetical rest, it will be found that each of these plants has formed the rudiment of a bulb or tuber; and the purpose of this bulb or tuber evidently is, to serve as a receptacle of nutriment to promote the inflorescence and fructification of the plant. In the class we now treat of, the nutriment is exhausted by these operations, and the plant then ceases to exist.†

There is, however, another class of vegetables, comprehending the potatoe, the tulip, the ranunculus, &c., which do not necessarily cease to exist after fructification. The reason of this is, that these plants, while the old tuber perishes, produce at the same time seeds and new tubers, and consequently, while new individuals are, under various modifications, produced from the seeds, the original plant with all its peculiarities is continued by a renewal of the bulb or tuber. The tree onion and the potatoe onion are both comprehended under this class.

But a third still exists, comprising the rhubarb, the holyhock, &c.; the *roots* of which do not perish, but annually increase in size by additions to the receptacle, whereby the individual is perpetuated from year to year, while new species, partaking more or less of the peculiarities of the parent plant, are generated by seeds. To this class the raspberry, &c., whose stems are biennial, pertain.

Are we not hence entitled to infer, that the layers in wood are intended for a similar purpose; and that all these tubers, bulbs, layers, &c. are different modifications resorted to by nature to provide a supply of nutriment, either for the continuation of the species by seed alone, as in annuals and biennials, or for this purpose, in conjunction with that of the perpetuation of the individual from year to year, as in perennial plants?

Having thus determined, generally, the use of the ligneous and cortical layers, we shall again proceed with our observations, confining them, in the first instance, principally to ligneous or arboraceous plants, or such as form their receptacle in cortical and ligneous layers on the trunk.‡ We have already conducted the plant to its complete development, when the action of the cotyledons, or receptacle of nutriment prepared in the parent plant, ceased to be necessary, the radicle and plumula having been rendered capable of fulfilling their respective functions of imbibing water from the soil, and elaborating it in the sun's rays. Let us now endeavor to ascertain by what means the cortical and ligneous layers before spoken of have been produced.

In following out this inquiry, it must be kept in mind, that we are treating of subjects possessed of vegetable life, and the exercise of whose functions is dependent upon the operation of the vital principle alone. Were we describing a piece of mechanism, such as a steam engine, or a watch, it would betray unpardonable ignorance if we were unable to give the *rationale* or explication of all and each of its separate motions; because, altough we are as ignorant of the true nature of heat and elasticity, as of the principles of life itself, yet we know with much more accuracy the laws by which the operations of the former are directed, than those which guide the vital functions. In the present state of our knowledge, then, all that can be reasonably expected is, that we should demonstrate the operations of nature, without pretending to explain the means by which these operations are effected by the omniscient Disposer of all things. Thus far, therefore, it shall be my present endeavor to pursue this inquiry.

On the extrusion of the radicle, it becomes capable of absorbing moisture from the soil. This moisture passes into the cotyledons, and having there imbibed more or less of this prepared nutriment, it is transferred, through the medium of the pith, into the plumula, exciting the spiral vessels in its progress, and thereby producing the elongation of the stem, and the expansion of the leaves.§ The superfluous moisture which has thus served as a menstruum to this prepared nutriment, is then evaporated; or, if the plumula has attained the faculty of elaboration, it is partly converted, by means of the leaves, into *cambium*. It will be remarked, that the nutriment furnished by the cotyledons does not require any further elaboration. It has already undergone this operation in the parent plant, and has thereby become adapted for, and is accordingly immediately applied to the increase of the substance of the new vegetable. It is only the moisture, or rather a portion of the moisture imbibed by the radicle, with the various other substances which it may casually hold in solution, that is now subjected to this elaboration.

We do not here purpose to trace the progress of this elaboration, the exhalation of the superfluos watery particles by the stomata or pores of the leaves; the æration of the remainder by the action of solar light; the disengagement of oxygen in the form of gas, or the reduction of the carbon, one of the principal ingredients of vegetable structure. These operations partake more of a chemical than of an anatomical character, to which latter, our present observations are chiefly meant to be confined. Suffice it then, to say, that the Cambium, when thus elaborated, descend from the leaf to the root, passing between the medullovey sheath and the cellular integument. In its passage it again undergoes various modifications, apparently through the instrumentality of the latter organ. In the first place, the libex or cortical layer is formed, and the principles not immediately essential to the vegetation of the plant seem to be, in a great degree extracted from the cambium, and deposited in this cortical layer. After this the Alburnum, or ligneous layer, is prepared through the agency of the liber, and deposited on the medullary sheath, and the proper sap or nutriment of the plant is then consigned to the cells or vessels composing this alburnum, by the glands of which the various saccharine, amylaceous or ligneous products are finally secreted. These several organs, the liber, the alburnum, and the proper juice or sap of the plant, have all been derived from the cambium elaborated in the leaf. The various modifications which it has undergone subsequent to its elaboration, may be inferred from the fact, that, while the sap is astringent or tannin in the liber, it is mucilaginous, albuminous and saccharine in the alburnum, and between the two layers participates in the qualities of both.

Esquesing, U. C. W. Colvill.

* Library of Useful Knowledge—Veg. Phys. p. 19.

† Another set of vegetables which may be referred to this class, are the Digitalis, &c., which convert the leaves; and the Brassica or cabbage tribe, which convert the leaves and trunk into the requisite receptacle.

‡ It may be necessary to state, that these remarks are here confined strictly to Exogenous plants, the Dicotyledones of Jussieu and De Candolle; and that by the term *trunk*, we must be understood to comprehend what is commonly denominated the root, the stem and branches.

§ Permit me here to refer to a paper "on the Functions of the Spiral Vessels and Pith," published by me in the Edinburgh Journal of Nat. and Geog. Science, (new series,) 1830; afterwards translated into German, and inserted in the Berlin Jour. of Science, &c.

WILBUR'S HARROW.

New York, April 25th, 1839.

Mr. Tucker—I have seen another communication in your valuable paper from Mr. Wilbur in relation to his improved harrow. According to the drawing and first description he gave of it in the Genesee Farmer, we had one made by an experienced Machinest, Mr. Sumner

Colman of Ulster Co. N. Y., which can be seen in full size at our store, made as perfect as it is possible from the description given of it. The farmers who have seen the harrow we have manufactured speak favorably of it, though many consider it too heavy for this section of country. A harrow of its dimensions I am persuaded is better calculated for prairie land, the soil of which being new and unbroken necessarily must require a heavy harrow, and one that is manageable by one man. These essentials for the preparation of the prairie lands for seed are united in Mr. Wilbur's improved harrow, and for that section of the country will be found most useful, and earn for him the gratitude of our western farmers for his liberality in introducing this improved implement.

J. W. WEAVER,
Agricultural Warehouse, New York.

THE WHEAT WORM.

Mr. Tucker—Any knowledge of the grain worm which appeared among our wheat last season, is of the highest importance to the farmer, if it is to remain among us and continue its ravages to the extent of last and year before last. It is necessary to obtain a knowledge of the time of its earliest appearance in the season—its habits; whether it is first attached to the chaff; placed on or in the kernel; the different stages of its existence; and to what extent and under what circumstances it is destructive to wheat after it is cut, if at all, that we may not be unnecessarily alarmed, and be able to find some method to prevent or guard against its ravages. Although few farmers are entomologists, or are able to give the Latin names and classify different insects,—though this may be desirable, it is not absolutely necessary, in my opinion, in making observations upon this insect. The farmer has more opportunities to watch it, and to make observations which will lead to beneficial results, than any other class of the community. Let us wake up and attend to our interests, and give to each other the result of our observations, and we shall confer a benefit upon each other, and to other parts of community, for all are interested in the success of the farmer.

I have read with attention all that has been published in the Genesee Farmer, and other papers which have come under my observation, on the subject. I have inquired among observing farmers for all the facts they possessed on the subject, and I will endeavor to give the result of my inquiries and observations in as concise a manner as possible. The worm which injured our wheat last year, was not the wheat worm which has done so much damage at the east. This is smaller—of a different color, (reddish;) several of them are frequently found in one kernel. That is well described by L. B. L. of Greece, whose observation I find to correspond very much with mine in many respects. I will add, that at and immediately after harvest the worm is uniformly from 3-8 to 1-2 inch in length, and increases in size until it perishes. I found dead ones an inch in length in cleaning wheat from a stack threshed this winter. I saw none of this size when I first threshed in the fall. I will observe further on this point, that in cleaning wheat, threshed about the first of November, from stacks, I observed many dead but found no live ones—these were much larger than at harvest. The number of dead ones was small, however, in proportion to the live, found in threshing in September, and the question was asked, what has become of the worms? With regard to their eating wheat after the kernel becomes hard, I did not at first believe they could, but have since become convinced to the contrary. I think Mr. Gaylord's experiments are conclusive on this subject. Still I thought, and still think, many farmers were unnecessarily alarmed as to the amount. After wheat is stacked in any considerable quantity together, it matters not how dry it is put up, it undergoes a process called by farmers sweating of the mow; heat being evolved, and passing through the whole mass. This I believe to be fatal to most if not all the worms in the center of the mow or stack. In examining a stack which stood out until January last, I observed that some of the heads hanging loose were very much eaten. All my wheat except this was threshed early, and some of it lay long in the chaff before cleaning. This stack stood where I passed it every day, and several times a day. Hearing so much, and such confident assertions, that the worms did destroy wheat in large quantities, if not stopped by threshing, I was in the almost constant habit of pulling out heads and examining what effect they had upon this stack. As my poorest wheat, and that which ripened latest, was put here, there were more worms here than in any other part of my wheat, I had reason to think that if they eat any, they certainly would this. If they did injure it, it was in such small quantities I did not discover it, and therefore was easy upon this point. When I found the heads hanging loose, so much injured, I confess I was surprised, and concluded I had suffered a considerable loss. On drawing the stack in the barn, preparatory to threshing, I was again surprised in finding the heads, except in the buts of the outside tier, no more injured apparently than at harvest, while of the other not a head had escaped damage that could be found—four, five and six kernels, and sometimes more, were eaten or partly eaten in each head. The inference was that they left the inside or perished, and worked only on the outside.

In wheat laying for some weeks in the chaff, I have always found the worm dead. I think they do but lit. damage after the wheat is threshed, and perish very soon. Many farmers believe this worm in small numbers to have infested wheat in this section of country for many years; several say they distinctly recollect to have seen this same worm in considerable numbers in certain years many years since. An intelligent farmer who formerly resided in the Black River country, says that about 20 years since, this same worm appeared in wheat in great numbers, and the same alarm prevailed among his neighbors as existed here last fall. Believing the worm was eating up their wheat in the mow, as threshing machines were not in use among them at that time, they set too with flails (to the neglect of their other work,) to save it from the all-devouring jaws of the insect, which they thought would eat it all up before winter. As he could not thresh his, it remained in the mow until winter; he then found his wheat yielded as much as his neighbors did in the fall, and he saved much expense in threshing. They mostly disappeared after that year, and very little notice was taken of them afterwards. I have for many years past noticed at harvest, kernels with holes or the whole inside eaten out, in the same manner that wheat has been for two years past before it was cut, and which we now ascribe to the worms. But I do not recollect to have noticed the worm particularly until threshing in the fall of 1837, when large numbers were found in the screen box upon cleaning the wheat. Serious fears were entertained that these were the same which committed such ravages at the east; but yet it is to be hoped the evil will prove only transitory, or at the worst a remedy may be found, and they will be as little feared as the Hessian fly.

Yours, G. L. B.

Henrietta, March, 1839.

[We owe an apology to the writer of the above, for the delay which has occurred in its publication. It was mislaid, or it would have appeared in proper season.]

Education of the Farmer.

Mr. Tucker—Notwithstanding there is very much said and done on education, at the present, there still appears to be a very great defect in the education of the farmer. The son who is intended for the bar or the pulpit, having acquired what knowledge he can at our common schools, must spend several years in some of our preparatory institutions, and then perhaps as many more in college, before he commences studying the profession which he is to follow, and to which he must apply himself for some length of time before he is permitted to practice it. But not so with him who is intended for the plough. He is permitted to spend only a few winters in some of our common schools, where, perhaps, he may acquire a knowledge of Arithmetic, Grammar, and Geography. Beyond this, but very few go, whilst the great majority stop short of even this. But why this difference? Why is the lawyer, the doctor, the minister, the manufacturer and the speculator who lives on the earnings of others—why are all these to be educated, and the farmer left to pursue his business in ignorance? Is it because farmers are not capable of acquiring knowledge? I think not; for better natural abilities can not be found than this class possess. But what is the cause of this difference then? Is it not the erroneous opinion which has been handed down from father to son, for centuries? for it has long been said, that the farmer needs but little education, that his business requires but little. But this is assertion without proof. The injurious effects of having the farming community left in ignorance, we plainly see. We see the Science of Agriculture entirely behind the age. Sections of country once fruitful, now barren. And farmers reaping but one half or two thirds the profit which they might, were their farms rightly managed.

But what may we expect to see when the farming community shall be educated as they ought to be? Will it be too much to expect to see the reverse of the picture just drawn? vs., the *Science* of *Agriculture*, at least, keeping pace with the other sciences, barren lands made prolific, and farmers reaping much greater harvests, with greater ease, than they now do?

There are different opinions as to the quantity and quality of education which the farmer ought to have, that he may pursue his business with pleasure and profit. For my part I would have every man, who calls himself a farmer, thoroughly acquainted with both the theory and practice of laboring with his own hands; and as thoroughly acquainted with every science which is in any way connected with the Science of Agriculture.

Cassander.

Hume, May 12th, 1839.

SHAMEFUL.

Mr. Tucker—In a debate on the bill for the advancement of Agriculture, April 29th, according to the reported proceedings, Mr. A. Cook, of Herkimer county, "moved additional sections, making it the duty of the boards of supervisors in each county, upon the passage of this act, to purchase, at the expense of their respective counties, grounds for a course for horse racing, and another arena for bull fights, and to defray the expense of fitting up, laying out, &c. by a tax on the county. Also, making it the duty of the board of Agriculture to purchase and lay out grounds for a state race course, &c., and to select a central location, having reference to the best interests of the state, &c."

Never has there been a more direct and pointed insult offered to the farmers of New-York, than is contained in the proposed amendments of Mr. A. Cook. The great body of the agriculturists of this state, the men who pay nine-tenths of the taxes, who defray the expenses of government, (and have paid this Mr. Cook three dollars a day some five or six months, to misrepresent and abuse them;) who furnish employment for our canals, which they have built and paid for; and who are the base and substratum of our prosperity, have asked of the legislature, not as a gift, for they would scorn such a supposition, but as a right to which they are unquestionably entitled, a few thousand dollars annually to excite and reward a proper spirit of agricultural enterprise and improvement. How is this request met? Why, by a proposed amendment, on the part of Mr. Cook, which places our agricultural population on a level with the black-legs and gamblers of the race course; with the ignorant bullies and assassins of the Spanish bull-baiting. To a full and free discussion of the claims of the farming community, I have not the most distant objection; every such discussion will place that body in a more elevated position, and prove more clearly the justice and propriety of granting them the trifling aid required. The man who can be guilty of

the ineffable meanness of seeking to cast ridicule on the wishes of farmers, or insult that body by comparing them to gamblers and cut-throats, will find, ere he has done, he has reckoned without his host; and should Mr. A. Cook ever again present himself for the suffrages of Herkimer county, unless I much mistake the wishes and spirit of the high-minded and prosperous farmers of that county, he will find himself most satisfactorily re-cooked in the result.

Mr. Lawrence deserves credit for the able manner in which he threw back the vile and slanderous insinuations alluded to, as well as for the general course he has pursued in attending to the expressed wishes, and advancing the cause of the agriculturist. G. R.

From Colman's Second Report.

Neat Cattle.

Of the neat cattle of the county much might be said in praise. Yet they are of no particular denomination. but intermixed with many accidental varieties. The North Devon stock mainly prevails throughout New England. Different varieties have been introduced, and crosses have been made in some instances with obvious advantage; but, as before remarked, intelligent, systematic, and persevering attempts at improvements in a breed, have not been made within my knowledge on any extensive scale in Massachusetts, save in one case, to which I shall presently refer more in detail.

1. Extraordinary Cows.—I shall give an account of some remarkable animals which have been found among what are called our native cattle. It is not pretended that they constitute a distinct race or characterize a particular class of animals; but they show at least what materials are within our reach, upon which to build a stock of high character.

A cow of Samuel D. Colt, of Pittsfield, from 1st December to 27th April, 148 days, produced 193 lbs. of butter.

A cow owned by R. Campbell of Pittsfield, has yielded 26 beer quarts of milk per day.

A cow owned by Hosea Merrill, gave 30 beer quarts of milk per day.

A cow owned by D. Fenn of Stockbridge, 8 years old, produced in one week 12 lbs. 9 oz. butter. During the same time, 10 quarts of the milk were sold, and in addition cream and milk were used freely in the family.

A cow owned by Calvin Davis, 4 years old in the spring of 1838, in 172 days produced 225 lbs. butter, and fatted a calf. An accidental injury to the cow, prevented a continuance of making butter.

Two cows of Wm. Dewey, of Alford, in good season, averaged for a length of time, 14 pounds of butter each per week.

A cow belonging to the late Dr. Hyde, of Stockbridge, for some time produced fourteen pounds of butter per week.

Two cows in Vandeusenville, produced 14 lbs of butter each per week.

A cow belonging to ——— Millard of Egremont, produced 14 lbs. of butter per week.

From two cows belonging to Russel Brown, in Cheshire, besides the free use of milk and cream in the family, 90 lbs. of butter were produced and sold in three weeks, and in four successive weeks, 114 lbs.

A cow owned in Stockbridge, by Stephen Willard, produced as follows:

In 321 successive days		331	lbs. butter.
" 284	"	" 293	"
" 306	"	" 318	"
911 days		942 lbs.	

"The above is exclusive of 25 lbs. made while fattening three calves." He adds, "my method of keeping has been grass only, from spring to fall. In the fall I begin with pumpkins and potatoes, and feed moderately during the time she gives milk. An account has been kept for only three years; but it would not vary much from the above, for the twelve seasons I have had her, except the present season she has been farrow." This cow is now eighteen years old, "and will calve again about the middle of February."

Two cows owned in Pittsfield, produced each 50 lbs. of milk per day; and one other 32 lbs. at a milking.

A cow owned by Thomas Hodges, in North Adams, produced last year 425 lbs. of butter; 400 lbs. of this amount were made in nine months. Her feed consisted of one quart of rye meal, and half a peck of potatoes per day; and very good pasturing.

To this list I will add the case of another cow, in the neighboring county, whose product must be considered as quite extraordinary. She is owned by Joseph F. Upton, of Ashfield, Franklin Co.

From the first of April, 1837, to the middle of February, 1838, her product was 335 lbs. 15 oz. From the 9th of May, 1838, to the 28th of December, 1838, she had produced 303 lbs. 3 oz. of butter, and was still making at the rate of one pound per day.

The owner adds, "In the year 1837, I killed my calf at three days old, and gave my cow the skimmed milk through the summer. I commenced the first of October to feed on potatoes. I gave her about one peck per day boiled as long as she gave milk. In the year 1838, I fattened my calf and killed it at four weeks old. It weighed 75 lbs. She has had nothing but grass this year, until the first of October; since then I have fed her with one peck of boiled potatoes per day. My cow was seven years old last spring." Her winter-keep at present, while giving milk, is as much hay as she will eat, and one peck of boiled potatoes per day. These cows are all of native stock, without any admixture of foreign blood. The three cases of largest product certainly cannot be considered as examples of high feeding. It is extremely desirable that some skilful farmer, should by a judicious selection from such animals as these, endeavor to form an improved race for the dairy. I have already said that this has been attempted by one gentleman in the state.

Before I proceed to say what he has accomplished, I will mention an interesting fact, communicated to me by an observing farmer of Stockbridge. Thirty-two years since he became the possessor of a very productive cow; and has continued the breed to this day.—She has never produced a bad milker, and some of her descendants owned by other persons in the village do equal credit to their parentage. The yield of one of them, which came within my knowledge, is twenty quarts per day.

2. Improvement at Ten Hills Stock Farm, Middlesex Co.—The great improvement in dairy stock, to which I have referred, has taken place on the Ten Hills Stock Farm in Charlestown, near Boston, under the skilful and enterprising efforts of Samuel Jaques. This account might perhaps with more propriety come under the report of Middlesex; but as intimately connected with dairy husbandry, I shall give it here, even though I may be induced to repeat it in another form. Perhaps no man in New England, or the country, has more practical skill, or better judgment, in relation to live stock than Mr. Jaques; and his experience has been long; and marked by careful and critical observation in those points to which his attention has been particularly directed. I have the pleasure, therefore, of letting him speak for himself, suggesting only such observations as I may deem proper to be submitted. The great principles of breeding, to an experienced and philosophic mind, are almost as well determined as the great principles of mechanics, chemisty, or any other branch of natural philosophy. The first and most undoubted of all principles is, that like produces like; and farther, that good qualities and bad qualities are transmissible; and as where two animals come together of peculiar merits, the good qualities are likely to be transmitted, so also where prominent defects or faults exist, these faults or defects are likely to descend and to become aggravated. This applies especially to breeding within the lines of consanguinity among all animals, the human not less than the brute races. It is, therefore, the great aim of the accomplished breeder, to make such a selection that the desirable qualities shall predominate on both sides; and especially that animals having similar defects or bad properties, should not be suffered to mingle to the aggravation of these evils.

A distinguished statesman of Kentucky, as I learn from a private source has given it as his opinion, that the milking properties of cows is much rather matter of accident than of breed; and that we must despair of being able to continue and transmit this property with any confidence of success. With the highest respect for the agricultural skill and intelligence of that gentleman, I cannot accede to this opinion; and it is directly contradicted by experiments made with the improved stocks in England and confirmed by several years' success. I know that it has become almost proverbial, that you cannot rely with certainty upon a good calf, because you breed from a good cow. But it is to be considered that few careful trials are made; that the character of the sire from which we attempt to breed, if any thing, more important than that of the dam, is generally mat- ofter indifference; and we are unreasonable enough to expect a good calf, when we send our cows to any miserable runt that happens to be in our neighborhood; that any substantial improvement of this nature, is seldom to be expected from a single cross, especially from animals, which are not themselves high bred, but merely if the expression be allowed, accidental individuals; and that such improvement can only be expected by continued trials, and careful and successive experiments.

3. Cream-Pot Breed.—From an account of his enterprises and success, with which Mr. Jacques has favored me, I make the subjoined extracts:

"It has been my object to effect such an improvement in milch cows as should produce the greatest quantity of rich milk, affording the largest quantity of butter. There is a greater difference in pecuniary profit between a good or a poor cow than among any other domestic animals. In some yards, there may be found those which will not produce more than three pounds per week, and others that would make nine, and all on the same keep. As we sometimes hear of cows, which have produced seventeen pounds of butter per week, and even more, it occurred to me to enquire why a breed or race could not be formed with the same valuable properties. This I have attempted; and have carried it to the third generation, and I am confident of success. I have a cow, whose milk has produced nine pounds of the best butter in three days; and this on grass feed only. This I call my *Cream-Pot* breed. I have bred my cream-pots with red or mahogony-colored hair, yellow noses, with mahogany-colored teats, yellow skin, silky and elastic to the touch. I have obtained the breed by the cross of a Durham short horned bull on a selected native cow with certain extraordinary points and properties, anxious to retain as much of the form of the Durham, as to ensure capacious udders and with the valuable property of affording rich milk. Though an admirer of the Durham short horns, I have not found them producing so rich milk nor making so much yellow butter as I could wish. The Durham race are round and straight in the barrel, full in the twist, and inclining to be thick in the thigh. I have wished for some improvement in the form of the bag. But I would premise, that whatever I may say in respect to breeding animals, I only desire to express my own private notions, without a wish to dictate to any one, from the experience I have had, which, I am sensible, is very limited. Generally, cows, which I have examined, giving the largest amount of the richest milk, have had capacious bags, full behind, extending far up into the twist and also well formed; hanging moderately deep when full in milk, and after the milk is drawn, quite the reverse, for I would avoid a fleshy bag. My Cream-Pot breed are full in the body, drop deep in the flank, are not quite so straight in the belly, nor as full in the twist, nor as thick in the thigh; but in other respects I wish them to approach the Durham as near as may be. My Cream-Pot breed excel particularly in affording a great quantity of rich cream, and that cream capable of being formed into butter in a short time, and with little labor, leaving a small proportion of buttermilk. Their cream produces more than eighty per cent. of pure butter; and it is not infrequent to form the cream into butter in one minute. It has been done in forty seconds.

"I have a heifer designated as Betty Cream-Pot, one of the third generation, which produced her first calf at two and a half years old. Mr. Brown, my foreman, made the following experiment upon her milk, without my knowledge at the time. After milking, he took two quarts of her milk out of the pail, and having strained it into a pan, allowed it to stand twenty-four hours. Having then skimmed the cream into a bowl, he churned it with a table spoon; and in one minute, by the clock, he formed the butter. It was then pressed and worked in the usual way, and amounted to half a pound of pure butter. After this the following practice was pursued for eight or ten weeks in succession. At each of four successive milkings, two quarts of the strippings were strained into a pan, making eight quarts in the whole. All was mixed together in the same pan, and then churned. The average time of churning did not exceed ten minutes; in some instances the butter was formed in five minutes. After being properly worked over, it was weighed and never fell short of two pounds. The remainder of her milk was for family use, and, when set for cream, produced the usual quantity. These experiments were made on grass feed only. She did not give a large mess; only about 12 quarts per day. I have forty cows and heifers, ten bulls and bull calves of different grades of this cream-pot breed, all bred and raised by myself. I keep my bulls, selected as breeders, until I have proof of the quality of their offspring. My old cream-pot bull is ten years old. My Don Cream-Pot, from which I am now breeding with some of my cows and heifers, is three years old."

It will be seen that Mr. Jacques speaks with all the enthusiasm of an amateur. I cannot endorse, certainly to their full extent, all his doctrines respecting the power of breeding at pleasure, any animals of any desired shape or color, and of forming them as a statuary would mould his plaster; but the approaches, which a scientifiic and experienced breeder can make to such a power as this are very considerable, as all the improved races of animals show, whether among neat cattle, horses, sheep or swine.

The dam of this stock was a noble sized cow, raised in Groton, Mass.; but the owner there knew nothing particularly of her origin. She was sold to a gentleman by the name of Haskins, residing in Dorchester, about five miles from Boston; and her cream was of such extraordinary richness, that it would become separated into butter by the motion of the carriage in bring-

ing it into the city. The stock owned by Mr. Jacques is descended from this cow by a cross with the improved Durham short horned bull Cœlebs, imported some years since into Boston by a gentleman of that city, and owned afterwards by Mr. Jacques. This bull was without a pedigree; but it is said there is good reason to believe, that he was a regular descendant from Mr. Collins's celebrated bull Comet. The bull now owned by Mr. Jacques is a son of his by the daughter of the Haskins cow, which was also the daughter of Cœlebs.

Mr. Jacques is entitled to great credit for his care and judicious selection in continuing and improving the stock. I have repeatedly seen the cream from these cows; and its yellowness and consistency are remarkable; and in company with several gentlemen of the Legislature, I saw a portion of it converted into butter with a spoon in one minute. The color of Mr. Jacques' stock is a deep red, a favorite color in New England. They are well formed and thrifty upon common feed; and, if they continue to display the extraordinary properties by which they are now distinguished, they promise to prove themselves, for dairy purposes, the most valuable race of animals ever known among us; and as remarkable as any of which we have any information. They have now reached the third generation; and maintain their high character.

From six cows taken promiscuously in a dairy of improved short horn stock in England, with a view to test the quality of the milk, it was found that they gave in the following proportion of butter to one quart of milk;

No. 1,	3 oz. 6 dwts.	No. 4,	1 oz. 10 dwts,
2,	1 " 6 "	5,	1 " 14 "
3,	1 " 12 "	6	1 " 6 "

These measures, it will be perecived, are given in Troy weight, of which it requires 175 lbs. to make 144 lbs. Avoirdupois. It is not stated, whether the quart was beer or wine measure; and it is therefore difficult to adjust the proportions. A variety of circumstances likewise would affect in some degree, the result, as whether the milk was taken at the beginning or the last part of the milking; and how long the cows had been in milk from the time of calving; and what was the kind of feed given them at the time of the experiment. Still, I have quoted the result, as under any circumstances, showing by comparison the extraordinary product of the cream-pot breed. *(To be Continued.)*

Dialogue between a Father and Son.

ON FALLOWING.

Frank.—How is it father that you never fallow your land? All our neighbors fallow and declare it to be necessary every four or five years—but why should it be more necessary for them than for you?

Father.—It is strange that the question of the necessity of fallowing still exists, particularly when the difference between the systems of management is so great, amounting to a year's rent in four or five, and the loss of the produce of at least a fifth part of the arable land every year. Some persons practice it for the purpose of clearing the land, which they affirm, cannot be done effectually without it; while others declare it is necessary, as a season of rest to the soil.* Now I have never found it necessary to resort to a whole year's fallow for either purpose, and yet I am sure that my land is more productive now than it ever has been and is much cleaner than the land of many of our neighbors, who practice fallowing most rigorously. But it is remarkable that many who fallow, for the purpose of clearing their land of weeds, will allow these to grow and often to perfect their seeds, on their fallows, between the times of ploughing! and this reminds me of a story relating to one of those who thus replenished his soil with a seven years crop according to the old adage, "one year's seeding is seven year's weeding." There was a public sale in his neighborhood and he being early escaped a heavy shower of rain; just at its conclusion, a neighbor, an enemy to the fallowing system, came in on horse back quite dry. "How now!" cried the fallowist, "where hast been to keep so dry?" "Why," replied the other, "just at the commencement of the storm I was passing your fallow below, so I rode under one of your fine thistles, and sat perfectly dry until it was over and then I came on." I have heard also of a favorite hog that had been lost for many days, and was at length discovered in a field that had received a whole year's fallow, to enable it to carry a wheat crop, completely hidden by the weeds, which were growing and blossoming above his head.

Frank.—And now I think of it, no one ever finds it necessary to fallow his garden, either for the purpose of cleaning or rest.

Father.—That is an observation which I was about to make, and it is with me conclusive; in fact no one can force land to rest—it will continually be throwing up some crop or other—and is an artificial crop more exhausting than one of those called natural? Unless indeed the countryman was right, who, to the observation that weeds will grow even in an unkindly season, replied, "yes, but the earth is own mother to the weeds, while she is only mother-in-law to the crops that are planted in her bosom" Much allowance I confess, must be made for soils, situations and circumstances; it is to the system of fallowing so religiously observed, that I object. Much also depends upon the ploughs that are used—many of these have the only quality of following the horses easily, but do not properly cultivate the soil—with such, fallowing is necessary. But I will read from my memorandum book, the management for the first course of crops, on the new field, which I received from farmer Vincent in so foul a state as to be heart-breaking as the neighbors termed it. It was an out stubble; I ploughed it deep and sowed it with rye on the tenth of October—the weeds sprung up so as to cover the land like a carpet, but the crop was fed by sheep in the spring, so they had not time to come to maturity. As soon as the land was cleared by the sheep, it was ploughed, harrowed and rolled, and the weeds were gathered and burnt on the surface—it was then suffered to lie, and in a short time the seed weeds had sprung up by tens of thousands; these were smothered at a blow, by being turned down by such a plough as the one we now use—the land was again worked with a harrow and roller, and again were the weeds collected and burnt. In a few days, another crop of weeds had made their appearance—they were again turned down, the land worked as before, and the remainder of the root weeds were again collected and burnt. This was the third clearing—the seed weeds again grew, but the quantity was exceedingly lessened by these operations. The field was then spread with soaper's ashes and stable manure, which were turned down by a shallow furrow, and turneps were sown on the 29th day of June, on the finest seed bed I ever witnessed. Thus this field had received five ploughings—the root weeds had been gathered and burnt three times, and four plentiful crops of seed weeds had been turned down and smothered by the 29th of June. The land was as clean as a garden; then why should it not be sown? Many of my neighbors however, advised me to reserve it for a wheat crop, to be sown at Michaelmas. Another crop of weeds sprang up with the turneps, but they were destroyed with the hoe. The crop of turneps was the best in the country. The largest roots were drawn and stacked for winter use, and the remainder were fed off by sheep. By these means the land was so enriched, that the crop of barley which followed, was the admiration of the neighborhood. The yield was prodigious, and sold at an extra price for seed. Clover was sown with the barley in the spring, which after harvest, afforded a considerable quantity of food for the cattle; and during the winter preparations were made for an early spring dressing of compost, (lime being one of the component parts,) which being laid on at the time of the first springing of the clover, caused a rapidity of growth which brought the crop of hay to the scythe about a week or ten days earlier than the generality of crops in the neighborhood, a great advantage to the second crop of hay. Both cuttings were very fine, and the yield great.

After the crops were carried, a considerable growth of aftermath took place, which was fed by sheep; the land was then skim-ploughed, the surface well harrowed, and then turned down by a deep furrow, and wheat was sown on the 12th day of October; this crop averaged forty bushels per acre, and was all disposed of for seed to those very people who had declared that such management would not do in these parts. The instant the wheat was carried, the stubble was skim-ploughed, harrowed and turned down and buck-wheat was sown and produced a very heavy crop.

Frank.—I suppose this mode of management ought to be termed the new system, (I'm sure it is in opposition to the old, which is in general use in our neighborhood,) and goes upon the principle of the new husbandry, *stint not, spare not.*

Father.—This is exactly the state of the case. The old system was, to prevent the weeds from growing; those who practiced it were therefore careful not to pulverize their soils, as the operation was sure to send up millions of weeds, which were afterwards to be eradicated by a whole year's fallow. The new system is, to induce the weeds to grow, and if I can do that, I can easily destroy them by turning them down. My plan is, when I have no crop on the ground, to plough and harrow for weeds—and I am generally pretty successful in obtaining good crops of them. But we who are of the new school, must be careful to cause our light to shine; we will therefore go and turn down those weeds which have sprung up in the four acre field since it was last ploughed; that field is, as you know, designed for turneps, and no time must be lost in exposing as often as possible, a fresh surface to the action of the sun and air; this is of equal importance with the eradication of the weeds.

Frank.—But could not the land be made sufficiently fine for the reception of the seed by ploughing and harrowing, and rolling in one half the time?

Father.—When land is crushed by the plough, harrow and roller, it is an artificial pulverization—and if a rain fall immediately after the operation, it will be found that it has done but little for the purpose; it is therefore a most deceptious practice to sow any crop requiring a pulverized soil, after once ploughing; for although it might be to appearance, all that could be desired in this respect, the particles of earth thus rent asunder, will immediately fall together, (drawn by the power of attraction, which we will talk about some future day) so as to exclude the atmospheric air, and then the external pressure will be so great as to bind the soil and render it totally unfit for a seed bed for the crop. This pulverization is perfectly different from that which arises from the effects either of frosts or repeated exposure by constant stirrings; by the latter operation, the earth is turned up to be dried and contracted by the sun and air, and afterwards, when penetrated by rain, it is expanded and falls to pieces, something after the manner of slacked lime. A soil which is thus pulverized remains light and porous, and will be found to retain a degree of moisture even in the driest seasons; acting as a sponge, it absorbs the exhalations from the subsoil, while a hard surface rends open and permits them to pass off into the atmosphere. It is to this natural kind of pulverization, that Jethro Tull attributes the fertility of the soil, and argues that the only use of dung is to bring it about by its expansive effects during fermentation.

Frank.—We now find the value of our new plough, which our neighbors consider a long and heavy concern. How completely does its wide wing cut off the weeds, and its noble mould-plate tumble them to destruction. What a pity that it is not more generally known! I now see the meaning of the term, cultivating the soil with the plough. The earth falls to pieces after it is raised by it, so as scarcely to require harrowing—and the surface is left perfectly level, with not a weed to be seen on it.

Father.—It will require but little harrowing—that however as well as rolling, it must have—thus the seeds of weeds, which are at present bound up in the clods that remain, will be liberated and then as you said, their destruction is inevitable.

Frank.—How totally different indeed, is this system to that which is practiced by all our neighbors. You see that John Lambert is turning over his large clods in the barn close for the third time, and I heard him say he could not break them, for the weeds were already destroyed by the heat of the sun, adding "the more you crush the clods, and the finer you make the surface, the more weeds you will have."

Father.—That is true—the sun has dried the clods so thoroughly that the root weeds, which were contained in them have been destroyed—but the seeds of millions of others with which they abound, only wait a convenient opportunity to vegetate, and that will be afforded them the first rain that falls after the crop of wheat is sown, when they will spring up and grow away with it. I ought however, to observe—it is not proper to pulverize the soil to such a degree of fineness for wheat, as that requires a close and compact seed bed. But you must have remarked that I never fallow for wheat—always for root crops, which also have all the dung and compost that I can afford. I never dung for wheat, but reserve as much as possible for those crops which provide food for cattle, always remarking, the heavier these are, the larger is the dunghill the next spring. And there is another observation which I wish to make—according to my theory, the weeds will spring up in abundance on a finely pulverized soil—if this they do on the wheat crop, they grow with it, and have time to come to maturity and shed their seeds—not so on the root crops, from which they are removed by the hoe.

So you see that our system is different from our neighbor's, from the beginning to the ending, and answers the purpose of fallowing, whether that be practiced for the purpose of cleaning the land, or affording it a season of rest—for Tull considers, that all crops are meliorating until they begin to blossom, and to perfect their seeds.

Frank.—Yes, and I now understand why our neighbors fallow every four or five years, and declare that it is, necessary, (as indeed for them it is,) and also why you do so much better than they,—without it.—*Far. Cab.*

* To the observation that land requires rest, 'yes,' replied an old farmer, 'about as much as my kitchen table does after the men have dined."

Lice on Cattle.

Many of our patrons inform us that their own experience confirms our doctrine as to the facility of destroying lice on cattle by means of sand or any fine dust sifted into the hair of the animal.

Mr. Hardy, of Waltham, one of our observing and successful farmers, says cattle that lie in the dirt will never be lousy—that those which lie on plank floors are quite apt to breed vermin. Mr. C. Bullard, of Framingham, who keeps the best of cattle says dirt, or any fine

powder, sifted into the hair will destroy all the vermin.

Let us then abandon those poisonous recipes—unguentam—tobacco—snuff, &c. to those who are fond of taking them in at the nose and the mouth, and let our cattle have something for medicine not quite so pernicious.

Children, whose parents have no combs, may be cured of the evil by a free application of flour-powder as soon as the article comes cheap enough.

Parents who are not able to take our paper can go to the doctor or the apothecary and buy some foreign drug which may answer *their* purpose better.—*Bost. Cult.*

From the New England Farmer.

We take much pleasure in laying before our readers the subjoined remarks of Dr. N. C. Keep, at one of our agricultural meetings, which we had before promised and which we know will be read with interest.

Manures.

Rev. Mr. Colman—Sir:—I send you the following as the substance of my remarks at the last agricultural meeting.

After alluding to the statements we had received on former evenings, of the great advantage of ditching and draining wet land; the improvements in the mode of exterminating the wild grasses, preparatory to planting such as we wish to cultivate, we came naturally to the enquiry, what nourishment do the cultivated plants require?

Plants are organized living bodies; they must have a home in the soil; they must have water and air; but beyond all this, if they could speak, we should hear the cry from many a field, "Give us *food*." Manure is far from being a simple substance. The most obvious division of its parts is into vegetable, animal, and saline.

The vegetable part of manure furnishes the substantial pabulum, or food for the plant; and also tends very much to preserve a due proportion of moisture in the soil. The saline parts act mostly as stimulants, and must be used in compost, or on soils containing vegetable matter. The severe drought of the last summer has demonstrated the value of vegetable compost in retaining moisture in the soil.

Squashes, sugar beets, and potatoes planted on sandy soil, manured with compost made of peat and lime, moistened with the wash from the barn-yard, survived the drought and yielded a respectable crop; while others planted on similar soil, manured with the best stable manure, died.

Lime neutralizes the *ulmic acid* which renders decayed vegetable matter partially or wholly unfit for manure, and forms a new compound—*ulmate of lime*. By the addition of one-sixth of animal manure, get a new product, the *ulmate of ammonia*. These are, probably, the most valuable salts in any manure.

The analysis which have been made, indicate an almost universal deficiency of vegetable matter in our soil. Science teaches us that by the aid of lime, or any of the alkalis sufficient so neutralize the ulmic acid, we may use with perfect success in supplying this deficiency, peat, swamp mud, muck, &c., which, if used alone, would be found to be inert or injurious.

The compost, sweetened by lime from the comparatively insoluble nature of the salts it contains, must be more durable than a similar compost where wood ashes are used instead of lime, because some of the salts produced by neutralizing ulmic acid with potashes are very soluble in water, and although beyond all question good, may, and probably will, for this very reason, be found by experiment to be too soon exhausted to be used on a large scale with economy.

All salts that dissolve readily in water, will soon escape from the soil; a few of them are volatile and may rise in vapor; but the major part of them, more particularly in compost manure, are not volatile, but are more or less soluble in water. Just so far as they are dissolved by water they are capable of being carried down by the rains, until they get beyond the reach of the rootlets of the plants.

Every farmer needs a laboratory appropriated to the manufacture of manure for his own uses. It should be covered from the weather, and be near the barn yard. A cistern large enough to contain all the wash of the yard should be near at hand. There is hardly an article of waste about the barn or house which does not properly belong to the compost heap. The contents of the wash-tub, refuse brine, the remains of all vegetable or animal matter, too poor to be otherwise used, should be used: night soil is very valuable. In short, every thing sweet or sour, fat or alkaline—the soot from the chimney, even fine charcoal, if to be used on a white soil, may be added with advantage.

The raw materials may be put down in layers, as for example, a layer of peat, then lime, or whatever alkali is used put upon it, then a layer of animal manure next, and so on. (It is more convenient to moisten the lime before using it, just enough to make it fall to a fine powder.)

Those who have had experience, inform us that the ingredients must be thrown on lightly and not trodden down. The pile being completed, the fermentation may be regulated by pumping more or less of the liquid manure from the cistern on to it. All the salts contained in the wash of the yard will combine with the mass, acting upon it according to the laws of chemical affinity, and in turn being acted upon in like manner.

The loss of manure by evaporation, I apprehend, is occasioned by manure being exposed while fermentation is going on; then the gases are let loose and readily fly off, but by having present four or five times its quantity of the decayed vegetable matter, (so abundant in our peat bogs,) we have an absorbent, which most effectually prevents the escape of ammonia. This is the *volatile* salt, and if we cannot get vegetable matter, we should take the soil for an absorbent.

We need more light on this subject. It is an immensely important practical question, which must be tested by experience, which of the alkalies or alkaline earths shall we use to make the best, most durable, and profitable compost. Also, how much by weight or measure of lime, (weighed or measured before slaking,) is necessary to neutralize a cord of peat? how much caustic or fresh made wood ashes? how much leached ashes? how much potashes? how much soda are required? But we know enough to begin. Let us attend to this branch of manufacture! Every man can, at a moderate expense, build his own laboratory. The raw materials can, in most cases, be obtained at small expense.

Our necessities call loudly for the establishment of these domestic manufactories. An adequate supply of manure cannot now be purchased at any price. By these establishments we can improve the quality and diminish the price of the article, and increase the quantity at least five hundred per cent. the first year.

N. C. K.

From twenty to thirty cocooneries have been constructed within fifteen miles of Philadelphia—and others are just commencing.

ROCHESTER MARKET.

Rochester, May 25th, 1839.

Grain, Provisions, Fuel, &c.

Wheat	1,38 pr bush.	Flour	6,75 pr bbl.
Corn	64 *a* 1,00	Pork—mess	20, *a*22,00
Oats	56 *a* 60	" prime	15, *a*17,00
Barley	75	Beef	12, *a*15,00
Beans	1,25	Pork Hams	10 *a* 11 pr lb.
Peas	75 *a* 1,00	Beef	10 *a* 11 "
Potatoes	31 *a* 38	Butter	18 *a* 20 "
Apples	38	Cheese	6 *a* 11 "
Timothy Seed	1,50	Lard	10 *a* 11 "
Flax Seed	1,25	Dried Apples	1,28 pr bush.
Hay	8,00*a*9 pr ton	" Peaches	4,00 "
Wood	2,50 *a* 3.00	" Plums	3,00 "

New Orchard Grass Seed.

A FEW Bushels of Orchard Grass Seed, raised in Pennsylvania the past season. Also, a new supply of Rye Grass Seed. For Sale at the Seed Store.

Rochester, May 24, 1839. w&mlt M. B. BATEHAM.

Town's Spelling Book.

THIS Work has been adopted by the Grammar School of Columbia College, under Prof. Anthon; by the Geneva Lyceum; the Rutgers Institute; Albany Academy, &c. The Schools in the New England States have introduced it, as far as it has been seen. 110,000 copies (we learn from the publisher,) have been called for since last October. We give Prof. Anthon's notice of the work. "I have examined Town's Spelling Book with considerable care, and have *every reason* to be pleased with the work. So far SUPERIOR is it, in fact, to other Spelling Books that I feel *no hesitation whatever* in recommending it to general patronage. CHARLES ANTHON.

may24-w&m 1t*

Thorough Bred Improved Short Horn Cattle.

THE subscriber has recently taken charge of the superior stock of Short Horn Cattle bred by L. P. Allen, Esq., on his farm at Grand Island, in the Niagara River. The original stock from which these have been produced, were selected from among the best animals in the country, and several of them were imported direct from England.

As a milking stock, the cows of this herd will challenge competition with those of any other in the United States; several of them being extraordinary milkers, and all of them good. For the making of butter, they have been thoroughly tested, and their dairy excellence is remarkable. Their value in this particular is fully retained in the grade animals descended from the bulls of this herd, which have thus far, without exception, proved the best of milkers. This excellence, possessed in reality, by no cow, so much as in the pure Short Horn, has been too much neglected by both English and American breeders, and thei value as dairy stock, thus under-rated. In addition to the above, are a select herd of DEVON SHORT-HORNS, bred from two choice, pure, Devon cows, directly descended from the celebrated herd of Mr. Cooke, of Holkham, Eng. These beautiful animals are a cross of different degrees with the pure "Improved Short Horn," without any admixture of common blood; and are as perfect combinations of excellence in color, hardihood, symmetry, and size as can be found.

As the present breed of all ages, has now attained the number desirable to be kept on the farm, (upwards of forty,) a part of them are offered for sale.

Application may be made either personally, or by letter post paid, to Samuel Allen, Esq., of Black Rock, N. Y., or to the subscriber on the farm, 5 miles below, at which a ferry connects with the main shore on the Erie Canal LEWIS G. COLLINS.

Grand Island, May 15, 1839.

P. S. A few fine grade animals also for sale. may25 w1am mtf.

Seasonable Seeds.

GENUINE Early Dutton Corn, Early Red Blazed do., Yellow Field Pumpkin, Buckwheat Field Beans. Also, nearly all other kinds of seeds, and machines for sowing them, on hand as usual at the Rochester Seed Store. [may18] M. B. BATEHAM.

TO SILK GROWERS.—A Treatise on the Mulberry Tree and Silkworm, and on the Production and Manufacture of Silk, embellished with appropriate engravings, a new work by John Clarke, containing pp. 366, just published and for sale at 12, Exchange-st., by [may11 4t*] WM. ALLING.

Agricultural Warehouse and Seed Store.

79 *Barclay-street, New-York.*

AT this old established stand, the subscribers take pleasure in announcing to the public, that they have made extensive arrangements to accommodate farmers in all articles connected with husbandry, viz:—Agricultural implements, a full and fresh supply of Field and Garden Seeds, Fruit Trees, Durham Cattle, Chinese and Berkshire pigs, 10,000 Morus multicaulis Mulberry trees; Publications on Rural subjects, &c.

Published here the Rural Library, S. Fleet, editor, a few copies of 1st vol. for sale. The object of this work is to constitute a Library at the least possible expense. 2d vol., commencing with Professor Low's Elements of Practical Agriculture, with nearly 250 fine engravigns; subscription $3. Subscriptions received for the Genesee Farmer, Cultivator, &c. &c. J. W. WEAVER & CO.

April 20-wm1y 76 Barlay-st, New-York

Morus Multicaulis.

THE subscriber has 5000 genuine Morus multicaulis plants healthy and thrifty, which he offers for sale on reasonable terms. Having the advantage of water communication through the Cayuga Lake and canals, he can box and forward them to any place desired.

☞ Orders *post paid* will meet immediate attention.

Aurora, Cayuga co., April 27, 1839. L. H. GORHAM.

Great and Timely Arrivals!

AT THE ROCHESTER SEED STORE.—The subscriber is happy to inform his friends and customers, that he has just received direct from England, a very large supply of imported Seeds, of such kinds, and in such quantities, as will meet the demands of the public, and of such quality as cannot fail to give satisfaction. Among them are,

1,500 lbs. English Purple Top Ruta Baga,
800 lbs. English and Scotch assorted Turnep,
650 lbs. Mangel Wurtzel,
300 lbs. French White and Yellow Sugar Beet,
175 lbs. Long Orange, and Altringham Carrot,
150 lbs. Yellow Dutch, and White Portugal Onion,
500 lbs. Cabbage, Cauliflower, Broccoli, and Radish,
450 lbs. White Dutch Clover, Trifolium Incarnatum.

Also—New Orchard Grass, Pacey's perennia and Italian Rye Grass, Spring Tares, Potatoe Oats, Winter Oats, many new varieties of Peas and Beans, together with a multitude of smaller articles.

Also—Nearly one hundred varieties of the choicest English FLOWER SEEDS. (These will speedily be put up in small papers, price 5 cents each, 50 cents per dozen.)

Also—Just received, a good supply of Thorburn's Chinese Tree Corn, and Rohan Potatoes.

Orders already received will be immediately attended to.

All orders from a distance must contain a remittance, or good reference in this city.

☞ Agents will receive new supplies as soon as possible.

May 1, 1839. M. B. BATEHAM.

☞ *Oswego Agency.*—M. B. Edson, Druggist, Oswego, is Agent for the Rochester Seed Store. A good assortment of Seeds maybe found there.

Mulberry Trees, &c.

WM. PRINCE & SON still have the following trees for sale.

35,000 genuine Morus Multicaulis trees, from 1 to 6 feet high, which will be sold either trimmed or untrimmed, or in cuttings. The wood of these trees is perfectly mature and they have been well preserved from all injury.

42,000 genuine Alpine trees of a very superior character, at least equal, to any in the Union.

10,000 of the splendid Morus Expansa, 5 to 9 feet high and much branched, remarkable for its great excellence in every respect. This is the only large parcel of this tree existing in this country.

75,000 Canton, Brussa, Morus Elata, Rose of Lombardy, Roman, Pyramidalis, Oriental, White Italian and other kinds—all of which will be sold at prices deemed moderate.

Also a large assortment of the Silk Worm's Eggs, of the most choice and valuable kinds.

Ample directions for the culture and successful propagation of all kinds of Mulberry trees will be given to every purchaser.

Flushing, near New-York, April 17, 1839. ap27 4t

Fruit Trees for Sale.

THE subscriber respectfully informs his friends and the public that he has for sale at his Nursery in Rochester, Monroe county state of New York, a large quantity of Fruit Trees, grafted and inoculated with the most approved kinds, now fit for transplanting, which he will sell on the most reasonable terms.

April 15, 1838. SAMUEL MOULSON.

N. B. Cash will be paid for a few thousand two years old Apple trees.

Monroe Horticultural Garden and Nursery,

GREECE, MONROE COUNTY, N. Y.

THIS establishment now comprises over 20 acres, covered compactly with trees and plants in different stages of their growth.

The subscriber offers to the public a choice selection of Fruit Trees, of French, German, English and American varieties, consisting of Apples, Pears, Plums, Peaches, Cherries, Apricots, Nectarines, Quinces, Currants, Gooseberries, Raspberries, Grape Vines, Strawberries, Ornamental Trees, Shrubs, Plants, Hardy Roses, Vines, Creepers, Herbaceous Perennial Plants, Bulbous Roots, Splendid Pæonies, Double Dahlias, &c. &c.

Also, a large collection of Green House Plants, of choice and select varieties, in good condition.

Orders respectfully solicited. Trees and Plants, when ordered, are carefully selected and faithfully packed, and if desired, delivered on the Canal, one mile from the Nursery, or at Rochester.

Orders for Mr. Rowe's Nursery received by the publisher of this paper.

Catalogues will be sent to every applicant, gratis, or may be had by calling at the office of the Genesee Farmer

April 1, 1838. ASA ROWE.

Morus Multicaulis.

A FINE lot for sale; also, a few English Hawthorn of large size, a very desirable lot, by S. MOULSON,

February 27. Front-street.